

**Notice of Allowability**

Application No.

09/922,065

Examiner

Ted M. Wang

Applicant(s)

MAR ET AL.

Art Unit

2634

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/14/2005.
2. ☒ The allowed claim(s) is/are 1-11, 13, 14, 16, 17, 19, 20 and 22-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 21 December 2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, filed 10/14/2005, with respect to Claims 1, 5, and 23-26 have been fully considered and are persuasive. The rejections of Claims 1, 5, and 23-26 under 35 USC § 102(e)/112 second paragraph have been withdrawn. Claims 27 is amended as shown in the Examiner amendment to make the Claims 27 and 28 allowable.

### *Examiner Amendments*

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative Michael Johnson on December 21, 2005.

4. The application has been amended as follows:

In the claims:

- Change Claim 27 as following ---

Claim 27 (Previously Presented): A system ~~that compensates for phase noise added by a spectrum analyzer from phase noise measurements of a signal under test (SUT), the system~~ comprising:

a spectrum analyzer that measures phase noise  $\mathcal{L}(f_m)$  data of the a signal under test (SUT); and

a controller that mathematically corrects the phase noise  $\mathcal{L}(f_m)$  data of the SUT measured by the spectrum analyzer to produce actual phase noise  $\mathcal{L}_{SA}(f_m)$  data for the SUT; wherein the system compensates for phase noise added by the spectrum analyzer.

***Allowable Subject Matter***

5. Claims 1-11, 13, 14, 16, 17, 19, 20, 22-34 are allowed.
6. The following is an examiner's statement of reasons for allowance.
  - The prior art fails to teach an apparatus/method of Claims 1, 19, 23, 27, and 31 that specifically comprises the following:
    - The instant application is deemed to be directed to a non-obvious improvement over the admitted prior art of the instant application and the invention patented in Pat. No. US 6,246,717, US 6,114,858, US 5,337,014, US 6,313,619, and Software manual – Software for Phase Noise Measurement for R&S FSU, R&S FSP, R&S ESPI, R&S FSIQ, R&S ESIB and R&S FSE with R&S FSE-B15 or external PC with WINDOWS, R&S FS-K4 (1108.0088.02), Version 2.0, Rohde & Schwarz Test and Measurement Division, and Phase Noise Measurements with Spectrum Analyzers of the FSE family, Application Note 1EPAN 16E, 02 Oct. 95, Josef Wolf. The improvement comprises that
      - With regard claims 1 and 23, “applying a correction to a measured phase noise  $\mathcal{L}(f_m)$  value for the SUT to determine an actual phase noise

$\mathcal{L}_A(f_m)$  value for the SUT, wherein the correction comprises mathematically removing an added phase noise  $\mathcal{L}_{SA}(f_m)$  value contribute by the spectrum analyzer from the measured phase noise  $\mathcal{L}(f_m)$  value of the SUT.” as recited;

With regard claim 19, “calculating an actual phase noise according to

$$\mathcal{L}_A(f_m) = 10 \left[ \log_{10} \frac{\mathcal{L}(f_m)}{10} - \frac{\mathcal{L}_{SA}(f_m)}{10} \right]$$

wherein the term  $\mathcal{L}_A(f_m)$  is the actual phase noise value at an offset frequency, and the terms  $\mathcal{L}(f_m)$  and  $\mathcal{L}_{SA}(f_m)$  are the measured phase noise value of the SUT and the added phase noise value of the spectrum analyzer at the offset frequency  $f_m$ , respectively.” as recited;

With regard claim 27, “a controller that mathematically corrects the phase noise  $\mathcal{L}(f_m)$  data of the SUT measured by the spectrum analyzer to produce actual phase noise  $\mathcal{L}_A(f_m)$  data for the SUT; wherein the system compensates for phase noise added by the spectrum analyzer.” as recited; and

With regard claim 31, “a compensation program stored in the memory portion and executed by the controller portion, the executed

compensation program applying a mathematical correction to the measured phase noise  $\mathcal{L}(f_m)$  to produce an actual phase noise  $\mathcal{L}_A(f_m)$  for the signal under test the correction comprising compensation for added phase noise  $\mathcal{L}_{SA}(f_m)$  associated with the spectrum analyzer in the measured phase noise  $\mathcal{L}(f_m)$ , the added phase noise  $\mathcal{L}_{SA}(f_m)$  being either determined by measuring a reference signal phase noise  $\mathcal{L}_{ref}(f_m)$  value with the spectrum analyzer and removing from the reference signal phase noise  $\mathcal{L}_{ref}(f_m)$  an a priori known reference signal phase noise  $\mathcal{L}'_{ref}(f_m)$  value or determined from spectrum analyzer phase noise data supplied by a manufacturer of the spectrum analyzer." as recited.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Conclusion**

8. Reference(s) Phase Noise Measurements with Spectrum Analyzers of the FSE family, Application Note 1EPAN 16E, 02 Oct. 95, Josef Wolf are cited because they are put pertinent to the Phase Noise measurement with a Spectrum analyzer. However, none of references teach detailed connection as recited in claim.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is (571) 272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Ted M Wang

Examiner

Art Unit 2634

Ted M. Wang

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**